REMARKS

Review and reconsideration on the merits are requested.

Applicants follow the paragraphing of the Examiner in **DETAILED ACTION**.

Paragraphs 1 and 2:

Formal.

Paragraph 3:

Applicants appreciate the Examiner returning initialed PTO/SB/08.

Paragraphs 4 and 5:

Formal.

Paragraph 6:

Self-explanatory.

Paragraph 7:

Avoided by combining claim 1 with claim 21, not rejected.

Paragraph 8:

Applicants appreciate the Examiner indicating certain rejections are withdrawn.

Paragraph 9:

Since claim 22 has been combined with claim 23, not rejected in this paragraph, the rejection is avoided.

Paragraph 10:

Formal.

Paragraph 11:

Since the obviousness-type double patenting rejection of Paragraph 11 of the first Action was only provisional, Applicants defer commenting thereon at this time.

Paragraph 12:

Claims 1 and 21 are combined and claims 22 and 23 are combined. All other claims depend from these "combined" claims which contain subject matter not provisionally rejection on grounds of obviousness-type double patenting. The rejection is avoided.

Paragraph 13:

The provisional obviousness-type double patenting rejection in Section 12 of the first Action is changed to an obviousness-type double patenting rejection. Claims 1 and 21 are combined. The balance of the claims depend directly or indirectly from claim 1. Claim 23 was not rejected. The rejection is avoided.

Paragraph 14:

Claims 10, 22 and 24 were rejected on grounds of obviousness-type double patenting. Claim 10 was dependent from claim 22 and claim 24 dependent from claim 22. The subject matter of claim 23 (not rejected) is included into claim 21. The rejection is avoided.

Paragraph 16:

Claim 23 was not rejected. Claims 1 and 23 are combined, avoiding the rejection.

Paragraph 17:

The Examiner provides remarks on Hellmann et al. The rejection was not extended to claim 21 and claims 1/21 are combined. The rejection is avoided.

Paragraph 20:

Formal.

Paragraph 21:

Formal.

Paragraph 15:

The obviousness-type double patenting rejection is merely provisional. Since it is only provisional, Applicants do not offer comments thereon at this time.

This leaves the rejections of Paragraphs 18 and 19, and Applicants now traverse those on the merits.

Paragraph 18:

Claims 1, 3-5, 7-13 and 18-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,324,566 Ogawa et al (Ogawa).

Ogawa is directed to a water-repellent and oil-repellent film. The water-repellent and oil-repellent film of Ogawa is produced by a step of forming a glass coating layer having an irregular substrate surface by mixing fine glass particles with silicate glass on a substrate, heating and a step of allowing a fluorocarbon silane active material containing a chlorosilane group to chemically adsorb onto the substrate.

In complete contrast to Ogawa, the invention of the present application is not directed to achieving water repellency or oil repellency, and, of course, in no fashion provides a layer made of a fluorocarbon on an irregular surface.

It appears that the Examiner is somehow analogizing the fine particles of silica (a silicate glass being referred to at the bottom of column 26 of Ogawa) as analogous to the island projection-modified part of the present invention.

However, the present invention does not in any fashion contemplate the use of a water- and oil-repelling adsorbing film formed on a material having active hydrogen such as hydroxyl groups, etc., and Applicants **respectfully request a telephone interview** concerning this particular rejection.

Paragraph 19:

Claims 1, 3-5, 7-13 and 18-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,777,045 B2 to Lin et al (Lin) in view of JP-A 11-106, 225 Kyoichi et al actually Inagi et al (Inagi).

Lin discloses a dome-shaped enclosure containing a dielectric material having a rough surface with an average roughness of about 150 to 450 micro inches and a thermally sprayed ceramic film formed on that surface, whereby the thermally sprayed ceramic film will have a negative average skewness and will have an exposed surface which is processed to a textured structure. The dome-shaped enclosure wall of Lin has the advantage that, in the case that the enclosure wall is used for a plasma treatment chamber, the sputtering material generated by the plasma treatment can adhere to the textured portion.

In the Examiner's view, Figure 3B of Lin shows that the particles themselves form projections during the initial stage of the Lin process. However, referring to Lin the thermally sprayed film obtained in Lin is a "conformal coating 420" (Lin, column 8, line 56). Figure 3B of

Lin simply shows schematically how the thermally sprayed particles fly to and deposit on the substrate during thermal spray film formation.

Referring to Lin at column 9, lines 47-53, Lin teaches that the stand-off distance and angle may be regulated so that the spray coating material forms a "lamella" structure with "pancakes". From this additional disclosure in Lin, it is believed quite clear that projections **cannot** be formed by the method described in Lin.

Applicants submit herewith for the Examiner's consideration two publications in further rebuttal of the rejection over Lin in view of Kyoichi.

Oki S., et al, "Surface Morphology of Plasma Sprayed Ceramic Coatings", Proceedings of the International Thermal Spray Conference, 25-29, May 1998, Nice, France, pages 593-597 describes how a thermally sprayed film changes with changes of the stand-off distance. In Oki et al, the structure of the thermally sprayed surface is observed with a SEM by changing the thermal spray distance using an aluminum powder. In lines 7 to 17 of page 595, Oki et al disclose that, as the stand-off distance decreased, the Shape factor (the magnitude of peripheral material projections from the splats generated by impact) increases, namely, the projections become crushed "pancakes".

Fukanuma H., et al, "Splat Formation in Off-Normal Angle Spray", Proceedings of the 1st. International Thermal Spray Conference, 8-11 May, 2000, Montreal, Quebec, Canada, pages 767-776 also teaches the effects of changing the angle during thermal spraying. The structure of the thermally sprayed surface is observed with a SEM by changing the angle of the substrate as the object to be thermally sprayed relative to the thermal spray gun using aluminum powder. In

Fig. 4 at page 770 it is disclosed that even if the angle is changed, the projections merely assume a laterally expanded "lamella" shape.

Applicants thus respectfully submit that the above literature quite clearly teaches that, in accordance with Lin, projections would not be formed as set forth in the claims of the present application though, according to Lin, a thermally sprayed film may be formed having a "lamella" structure made of "pancakes".

Inagi, on the other hand, relates to a quartz glass having concave and convex portions on the surface thereof, whereby the concave and convex portions are spherical or ovally spherical with a diameter not exceeding 10 μm (claim 1 of Inagi).

As a specific manufacturing method for a quartz glass in accordance with Inagi, a thin film forming material is fabricated into the form of a thin film with a thickness not exceeding 100 μm on the quartz glass surface by coating with a coating means such as a spinner or the like. Thereafter, the glass is subjected to etching in an atmosphere containing a HF solution or fluorine.

Applicants have advised the following regarding Inagi.

With respect to the mechanism of such concave and convex surface formation, Paragraph [0011] of the Inagi specification states that:

> "[T]he mechanism with which spherical or ovally spherical concaves and convexes are formed on the quartz glass surface via the etching treatment under an atmosphere containing the aforementioned HF solution or fluorine is speculated as follows; though etching is suppressed at the portion where a thin film is formed, the glass

surface is fractionally etched due to the permeation of the atmosphere containing the HF solution or fluorine along the molecular configuration of the thin film molecule in case where the thickness of the thin film is small. Accordingly, since the atmosphere containing the HF solution or fluorine cannot penetrate to the surface of the quartz glass in case where the thickness of the thin film is large, formation of spherical or ovally spherical concaves and convexes becomes difficult."

Considering the above, the concave and convex areas formed in the quartz glass surface according to Inagi have a state in which portions where the quartz glass has been etched are recessed in a spherical or ovally spherical form as concave areas and in which the portions where the quartz glass has not been etched remain as is.

In the view of Applicants, the projections defined in accordance with the present application could not be formed following the teaching of Inagi which, in fact, would be clear from Fig. 1 of Inagi showing a quartz glass surface obtained in accordance with Inagi's Example 1. Applicants note as follows:

"Note) Example 1: "In a tank filled with soapy water, a quartz glass tube was sunk, pulled up after rotation, and dried. On the surface of the quartz glass, a thin film with a thickness of 1 μm was formed. When the quartz glass tube was subjected to etching with a 5% HF solution for 120 min, about 400,000/mm^2 of spherical or ovally spherical convexes and concaves with diameters of from 0.5 to 3 μm were formed on the surface as shown in Fig. 1."

For all of the reasons advanced above, withdrawal of all rejections is requested.

With respect to any "provisional" obviousness-type double patenting rejection, it is believed proper to pass the present application to issue.

Respectfully submitted,

Peter D. Olexy, P.C.
Registration No. 24,513

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: March 20, 2006